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liberal construction of the law, and the customs officers are notified that the words 'scientific books and periodicals devoted to original scientific research' relate to new discoveries in the field of science, and do not include textbooks, compilations, and discussions of scientific subjects already understood. It is still uncertain how much original matter will entitle a book to free entry as one 'devoted to original research,' but a case which has come up recently in Philadelphia concerning the importation of a medical work has been appealed to the Circuit Court and may bring about a settlement of the question.

UNIVERSITY AND EDUCATIONAL NEWS.

THE annual report of the Provost of the University of Pennsylvania, with the appended documents, makes a volume extending to 248 pages. It covers, however, a period of more than two years, from June 9, 1894, when Mr. Harrison assumed the duties of acting Provost, to September 1, 1896. This will probably always be regarded as one of the most important periods in the history of the University. The preceding Provost, Dr. Pepper, had used his great energy and abilities to expand the University in every direction. Mr. Harrison has placed the external and internal affairs of the university on a firm basis. He has supplemented his own executive ability by a Vice-Provost, Professor Fullerton, whose knowledge of educational matters has greatly aided the reorganization of the University. This work has extended to every school and department, the standards having been raised throughout and the correlations improved. The chief losses to the scientific departments have been the death of Professor J. A. Ryder, and the resignations of Dr. John S. Billings and Dr. Harrison Allen; the chief gains have been the appointments of Professor C. A. Doolittle, in astronomy; Professor E. G. Conklin, in comparative embryology, and Professor A. C. Abbott, in hygiene. Of advances in the University the next noteworthy has been the gift of \$500,000 by the Provost for the encouragement of liberal studies and the advancement of knowledge. Of nearly equal importance has been the erection of dormitories, and of Houston Hall, an admirable club house

for students. In the scientific departments attention should be called especially to the work of the Wistar Institute and of the department of archaeology and paleontology, and to the establishment of the Flower Astronomical Observatory and the Botanic Garden.

GENERAL J. WATTS DE PEYSTER will erect for Franklin and Marshall College, Lancaster, Pa., a library building with a capacity for 75,000 volumes.

PRESIDENT GILMAN, of John Hopkins University, has accepted the presidency of the Baltimore School Board.

FRANCIS E. LLOYD, professor of biology in the Pacific University, Forest Grove, Oregon, has been appointed professor of biological science in the Teachers' College, New York.

DR. ALEXANDER P. ANDERSON has been appointed professor of botany at Clemson College, S. C.

DR. JAMES WARD, fellow and one of the tutors of Trinity College, Cambridge, has been appointed to the newly established chair of mental philosophy and logic. The new University statutes passed in 1881 provided that professorships should be established in physiology, in pathology and in mental philosophy and logic as soon as sufficient funds could be provided from the common University fund and other sources. Accordingly a professor in physiology was appointed in 1883 and a professor in pathology in 1884. Owing to the decrease in the college revenues, the common University fund was found insufficient to justify the annual charge of £700, the stipend of the professor of mental philosophy and logic. As we have already reported that the chair was at last established by the Senate on December 10th with the assistance of a subscription from Professor Sidgwick.

PROFESSOR ALFRED HUGHES has resigned the chair of anatomy in the University College, Cardiff. He has granted to the College the free use of his anatomical collections, on which he has spent large sums of money and many years of labor. In the event of his wishing to remove these at some future period, he has placed at the disposal of the College a sum of money sufficient to replace them.

DR. VON BUCHKA has been appointed the successor of Dr. Eugen Zell in the Imperial Board of Health, Berlin, and has qualified himself as privat-docent in the University of Berlin. The subject of his inaugural lecture being 'The scientific basis of the newer development of analytic chemistry.'

DISCUSSION AND CORRESPONDENCE.

NOMENCLATURE OF METAMORPHIC LAVAS.

IN the gold belt of the Sierra Nevada there are two very distinct sets of lavas. One of these is Juratrias in age or older, and is separated by a marked unconformity from a later set of lavas, chiefly of Tertiary age. The older set of lavas has been metamorphosed in varying degrees, so that at some points their original nature is not evident. Even where little altered they almost universally contain secondary minerals, such as epidote, zoisite, chlorite, urallite and calcite. The general appearance of these rocks and their mineral composition is, therefore, very different from the corresponding set of Tertiary lavas.

It is, therefore, very confusing to the general public to use the same set of names for the two sets of rocks. In the gold-belt region the older series of lavas has been compressed and infolded with the Juratrias and older sediments, which are called the auriferous slate series, since they contain by far the larger portion of the gold-quartz veins of the Sierra Nevada.

In many other parts of the world there are similar broad distinctions to be made between an older and younger set of lavas. It is very important that some method should be devised by which one may designate the fact that any given lava originally corresponded to a given type and at the same time express the fact that it has undergone metamorphism. This has been done in specific cases in various parts of the world. Thus Dr. Bascom, with the rhyolites expresses by the prefix *apo-* the fact that the rock, originally a glassy rhyolite, has undergone devitrification. The prefix *epi-* has also been used in some cases to express alteration. Thus the rocks called the epidiorite have been shown in many cases to have resulted from the alteration of diabase. The term *metadiorite* was used by Dana, and lately has been used by Cross and the writer, for diorites formed by the

alteration of other rocks, without reference to their original character. None of these terms has thus far been used in a general way to express alteration in all of the altered lavas.

Dr. Bascom writes concerning the three prefixes that have been mentioned, as follows:*

"The prepositions *meta*, *epi* and *apo*, as prefixes, all indicate some sort of an alteration. Their exact force has been thus defined by Professor Gildersleeve: '*Meta* indicates change of any sort, the nature of the change not specified.' This accords with the use of the prefix by Dana in such terms as '*metadiorite*' and '*metadiabase*.' These terms have been recently revived to designate rocks 'now similar in mineralogical composition and structure to certain igneous rocks, but derived by metamorphism from something else.' *Epi* signifies the production of one mineral *out of* and *upon* another. This prefix has not been much used. We find it in such terms as *epidiorite*, *epigenetic hornblende* and *epistilbite*. *Apo* may properly be used to indicate the derivation of one rock from another by some specific alteration."

It is evident that Professor Gildersleeve's definition, that the prefix *meta* is the most logical one to use to express, in a general way, the metamorphic condition of altered rocks. Probably if the term had not already been used in certain specific senses there would be no objection to its adoption for this purpose, and speaking of *meta-andesites* instead of *porphyrites*; of *meta-basalts* instead of *melaphyres*, of *meta-rhyolites* instead of *quartz-porphyries*, and of *meta-trachytes* instead of *orthophyres*. This would express not only at once the fact that the rock was originally an andesite, basalt, rhyolite or trachyte, but also of the fact that it had undergone a metamorphism which would suggest the presence of the various secondary minerals which are almost always found in such altered lavas.

The adoption of this system of nomenclature is urged by the writer as a means of simplifying the very burdensome and unphilosophical series of names in use at the present time.

H. W. TURNER.

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* Journal of Geology, Vol. I., p. 827.